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**R**EPORT

**INDIAN TROPOSCATTER ANTENNA  
STATION SUMMARY (TSR)**

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**INDIAN TROPOSCATTER ANTENNA STATION SUMMARY (TSR)**

1. (TSR) Indian troposcatter stations are used as command and control communications for the air defense system. This is evident by the close proximity of the majority of the troposcatter stations to airfields and existing air-warning radar sites, the revetting of control buildings, the presence of microwave antenna towers, and the location of stations along the Pakistani border.

2. (TSR) The 16 known troposcatter antenna stations and the troposcatter production plant in India, as observed on satellite imagery from [ ] are summarized in this report. A second troposcatter production plant has been reported,<sup>1</sup> but it has not yet been identified on imagery. Figure 1 shows the location of the troposcatter stations and production plants and is keyed to Table 1, which indicates the type of antenna, antenna dimensions, and operational status at each location.

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3. (TSR) Six of the 16 troposcatter stations have only dish antennas (Figure 2), six stations have only screen antennas (Figure 3), and the remaining four stations have both dish and screen antennas.

4. (TSR) Eleven of the 16 troposcatter stations are at, or in the immediate vicinity of, airfields; another is within 6 nautical miles of an airfield. Twelve of these 16 stations have revetted or partially revetted control buildings; in addition, three stations also have microwave antenna towers. The station now under construction at Lucknow (item 10, Table 1) suggests that the troposcatter network may be extended eastward to upgrade communications facilities along the border with the People's Republic of China.

5. (TSR) The Secunderabad Electronics Plant is involved in the production of troposcatter antennas. Several different items of communications equipment including troposcatter antennas (Figure 4), satellite communications (comsat) antennas, and microwave dishes have been identified at this plant.

6. (S) According to open-source materials, Bharat Electronics Limited, Ghaziabad, is a defense plant and produces radars and troposcatter antennas.<sup>1</sup> The specific location has not been confirmed on photography.

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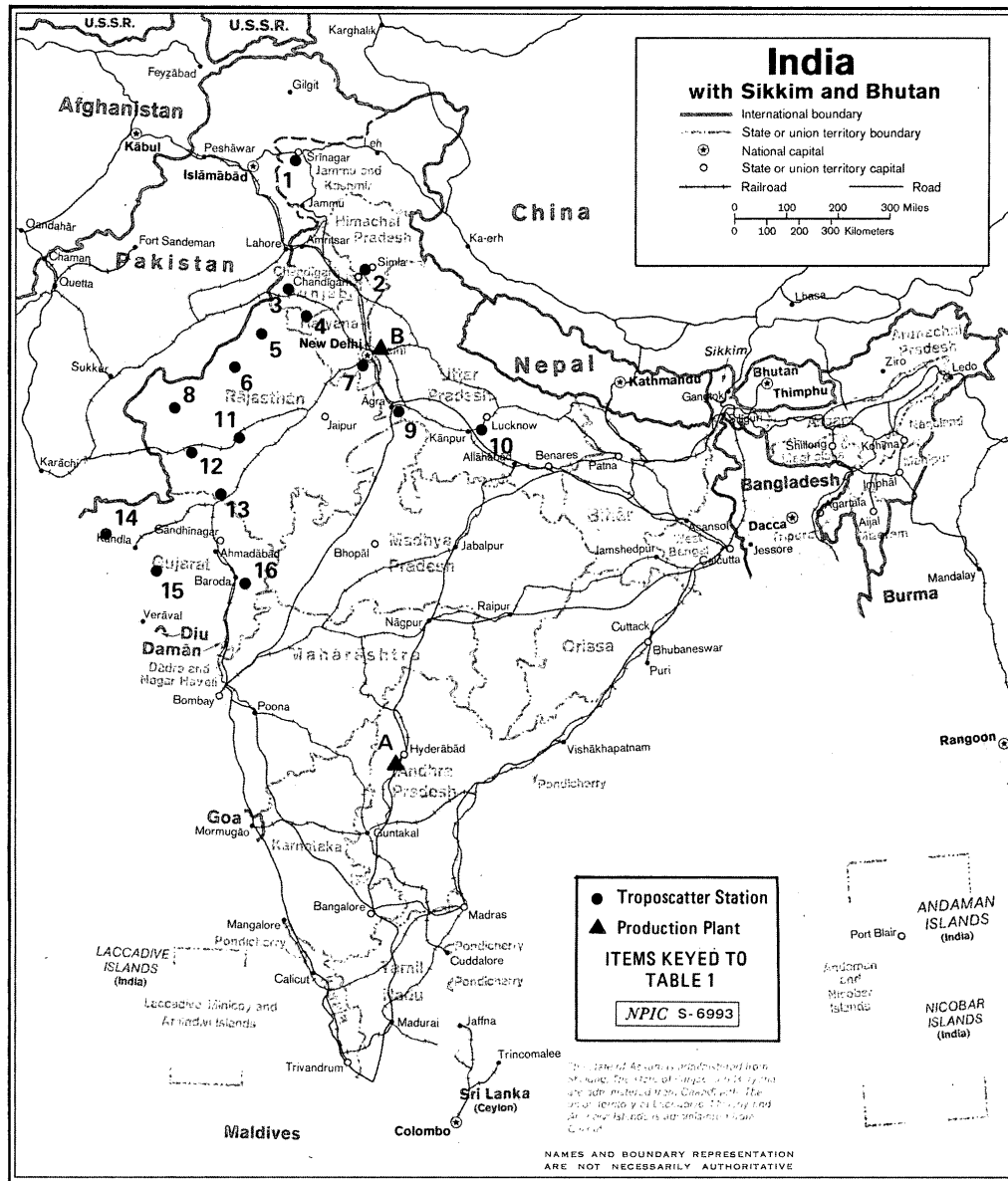


FIGURE 1. LOCATIONS OF TROPOSCATTER STATIONS AND PRODUCTION PLANTS, INDIA

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Table 1.

Data on Troposcatter Stations and Production Plants in India  
(Keyed to Figure 1)

This table in its entirety is classified TOP SECRET RUFF

Item	Name / Coord / BE No	No / Type of Antenna	Dimensions* (m)			Azimuth** (deg)	Correspondent(s)	Status	Remarks
			Diam	Width	Height				
1	Srinagar Tropo Sta 33-59-55N 074-48-30E	2 screens					Undet	Opr	1.5 nm NE of Srinagar Airfield
2	Kasauli Tropo A Radrel Sta 30-52-45N 076-58-45E	2 screens 2 dishes					New Delhi Sirsa	Opr	Station also has a microwave antenna tower
3	Bhatinda Tropo Sta 30-16-00N 074-46-45E	2 dishes					Sirsa	Opr	On E edge of Bhatinda Airfield
4	Sirsa Tropo Sta 29-33-15N 075-00-35E	2 dishes 2 dishes 2 dishes 2 dishes					Kasauli Suratgarh Suratgarh Bhatinda Bhatinda	Opr	On S edge of Sirsa Airfield
5	Suratgarh Tropo Sta 29-23-00N 073-54-00E	2 dishes					Sirsa	Opr	On SW edge of Suratgarh Airfield
6	Bikaner Tropo Sta 28-03-45N 073-13-20E	2 screen 2 dishes					Jodhpur Jodhpur	Opr/ ucon	On SE edge of Bikaner Airfield; the screen antennas in a late stage of construction as of Feb 78
7	New Delhi Tropo Center 28-27-25N 077-07-00E	2 dishes 2 screens 2 screens					Agra Undet Kasauli	Opr	2 towers for microwave antennas constructed
8	Jaisalmer Tropo Sta 26-53-25N 070-52-40E	2 dishes					Jodhpur	Opr	On E edge of Jaisalmer Airfield
9	Agra Tropo Sta 27-08-45N 077-55-40E	2 dishes					New Delhi	Opr	On E edge of Agra Airfield
10	Lucknow Tropo Sta 26-39-15N 080-55-00E	2 screens					Undet	Ucon	2 nm of Lucknow AW Radar Fac
11	Jodhpur Tropo Sta 26-20-30N 073-00-50E	2 screens 2 screens 2 screens 2 screens					Bikaner Undet Utarlai Jaisalmer	Opr	6 nm NNW of Jodhpur Airfield; station also has a microwave antenna tower
12	Utarlai Tropo Sta 25-49-30N 071-29-15E	2 dishes					Jodhpur	Opr	On E edge of Utarlai Airfield
13	Abu Road Tropo Sta 24-39-00N 072-46-40E	2 screens 2 screens					Baroda Undet	Opr/ ucon	2 screens in an early stage of construction in Sep 76
14	Raedhanpur Tropo Sta 23-13-15N 068-53-40E	2 screens 2 dishes					Jamnagar Jamnagar	Opr/ ucon	On S edge of Raedhanpur Airfield; screen antennas in a late stage of construction in Dec 78
15	Jamnagar Tropo Sta 22-29-15N 070-00-25E	2 screens 2 screens					Abu Road Raedhanpur	Opr	1.5 nm NNW of Jamnagar Airfield
16	Baroda Tropo Sta 22-20-20N 073-15-00E	2 screens					Abu Road	Opr	1 nm ENE of Baroda Airfield
A	Secunderabad Elctn Plant 17-28-10N 078-34-45E	--					--	--	Produces troposcatter antennas, comsat antennas, & microwave equipment
B	Bharat Elctns Ltd Ghaziabad Specific location not confirmed on imagery	--					--	--	Defense plant reportedly producing radars & troposcatter antennas <sup>1</sup>

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**REFERENCES**

**IMAGERY**

(TSR) Selected available KEYHOLE imagery acquired from [ ]  
[ ] was used in the preparation of this report.

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**MAPS OR CHARTS**

Operational Navigation Chart, Sheets G-7, H-8, H-9, and J-8, scale 1:1,000,000 (UNCLASSIFIED)

**DOCUMENT**

1. DoD. IIR 6 844 0085 78, *Bharat Electronics Limited (BEL), India, Mar 78* (UNCLASSIFIED)

**REQUIREMENT**

Project 130050NC

(S) Comments and queries regarding this report are welcome. They may be directed to [ ] Regional  
Analysis Division, Imagery Exploitation Group, NPIC, [ ]

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